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THE HOME AND ITS RELATION TO THE PREVENTION OF DISEASE*

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"WHAT knowledge," asks Spencer in his invaluable treatise on education, "is of most worth?" and his reply is, "Clearly that which must take precedence of all others is the knowledge which shows us how to live." This, he goes on to say, is of three kinds—that which teaches us self-preservation, that which prepares us for parenthood, that which prepares us for citizenship; and while he adds that the training for any one of these is in a measure the training for all, he insists, and rightly, that first of these, and of primary importance, comes that education which teaches self-preservation. Such a knowledge as will carry us through the ordinary acts and avocations of life, will show us what precautions are necessary for personal safety, what actions are likely to be followed by injury or disease, what measures are necessary to maintain health, is that which teaches us the meaning of self-preservation in its widest sense. As without health all activities become difficult or impossible, it is clear that parenthood or citizenship must be profoundly affected by any system of education which fails to place in its highest rank a knowledge of how to live rationally; how to use all of our faculties in the best possible way for ourselves, our families, and others; how to take care of our bodies; how to take care of our minds. That the healthy mind depends closely upon the healthy body we have finally learned, and it is one of the triumphs, and perhaps the greatest, of the wonderful century through which we have just passed that it has brought such vast additions to our store of knowledge upon the subject of health,

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and how to preserve it; of disease, and in what ways much of it may be prevented. "The brightest pages in the history of our century are the triumphs of sanitary reform and of medical science," writes Lecky. The whole trend of medicine is in the direction of the prevention of disease, and at the present moment in this and other countries men are toiling patiently in their laboratories, day after day, in the hope of finding out some new fact which will lift still higher the veil of darkness in which for so many centuries we have been enshrouded.

Seeing on what firm ground we stand to-day, for all practical purposes, in our knowledge of what constitute the main conditions of a healthy life, we are sometimes tempted to wonder why it is we have been so long in getting here. Much that we accept in the laws of modern hygiene has always been true, and among certain individuals and peoples and at varying times has had the sanction of custom. I am here to-day for the purpose of calling attention to some of the well-known but well-neglected truths of this nature, rather than to attempt to present to you anything distinctly new, realizing that it is sometimes well worth while to try to give familiar facts a new significance. Some of the oldest and most familiar of these facts form the elementary truths of hygiene to-day. We commonly refer to the Mosaic writings, and recognize in their regulations governing personal cleanliness, abstinence from certain kinds of food, and the isolation of those suffering from contagious disorders a sanitary code of a high degree of excellence; and here and there in following history through the ages we obtain interesting and refreshing glimpses of customs or conditions of which we can only say in admiration: "These people were far ahead of their day. Where in the ignorance about them did they learn to do this thing?" Even to us who are here to-day it is of interest to turn aside for a moment to look back upon the best-managed households of our mothers' day. I call to mind such a household, and remember the scrupulous cleanliness of every portion of the building and out-buildings, maintained with much difficulty and without any modern conveniences, in a northern country village. I can see now how carefully all the refuse of the household was destroyed daily by burning, how milk-pails and cans and bread-tins were scalded and exposed to the sunshine and fresh air daily, and how cellars were systematically whitewashed; in preserving-time, how the jars were actually sterilized and the fruits sealed to exclude the air, literally in hot haste. I can see these procedures and many more which were first-rate measures for the prevention of disease, and yet I know that the word "bacteria" was as unknown as Sanscrit. This simply points to the fact that in carrying out the essentials of right living as they knew it, and in following religiously

the results of long observation and experience, these people were using methods upon which modern science can offer no improvement. Such instances as the above you can probably multiply at once within your minds in various ways, all showing how some of the best doctrines of hygiene were in daily practice. It would be interesting if some student fond of digging in the records of past history would gather together a number of such usages and compare them with the results of our wider knowledge of to-day. "A man's own observation, what he finds good and what he finds hurtful, is the best physic to preserve health," said a famous writer of five centuries back in his "Regimen of Health." By our own experiences from our infancy up, through our own mistakes and those of others, in the "nooks and corners" of life, we have learned, and have finally, at the present day, gathered together a goodly store of knowledge which stands by us in preventing some of the ills and injuries of life, better often than we stand by it. Valuable, however, as we must consider all such empirical knowledge, its greatest function was probably fulfilled when it had so kept us in the paths of a simple, natural way of living that our good health resisted successfully the attacks of disease. Of the nature of those diseases, of the cause, we knew absolutely nothing; from what Socrates calls the "one only evil" on earth, "namely, ignorance," we suffered in a profound degree. It is pathetic to remember how many hundreds of years the human race has wandered in that wilderness, and how the human intellect has struggled age after age to fathom some of the mysteries which surround the maladies of the race. Every age has had its theories, and we all know that the ills to which flesh is heir have been attributed in turn to spirits and demons, to witches, to original sin, and to the hand of Providence.

> "I thowt twur the will o' the Lord
> But Miss Annie, she säaid it wur dräains,"

says the Village Wife in Tennyson, and the verdict, "Death by the 'Visitation of God,'" in the times of the plague in England, and sometimes even to-day, shows the strength of that belief. In savage tribes such beliefs still exist, and among ancient civilizations, as we travel, we still find, purchase, and wear amulets by which the people tried to resist or pacify the demons who possessed and tormented them. You may perhaps find a survival to-day in your friend or acquaintance who carries a rabbit's foot or a bag of camphor, pins up a horse-shoe, or wears strange strings with seven knots in strange places to ward off the attacks of certain diseases or of misfortune. A study of early American history will tell all you will want to know, probably, about

witchcraft, and even since that day we have had many theories of disease, many varieties of schools and systems of medicine. Still, during all that period epidemics flourished, and until the discoveries of Pasteur and later of Koch in the latter part of the nineteenth century no real understanding of disease and its causes had been reached. It is a familiar story to all of you how one brilliant discovery followed another in the field of scientific research until the germ theory of disease was fully established, and we knew for the first time the true nature of such terrible scourges as tuberculosis, typhoid fever, diphtheria, and many other ills. The nature and cause of these diseases once known, measures in many ways for their control and prevention have been developed and established. Under the name of hygiene or sanitary science these teachings have gradually been placed within the reach of the people, and a vast amount of detailed information for the guidance of the individual and for the benefit of the community has been published. We see its results everywhere, for the modern student of hygiene views life from every stand-point: in improved laws relating to isolation, disinfection, etc.; in better water supply; in greater attention to hygienic requirements of light, air, and space in our public buildings; in improved tenement-houses; in medical inspection of schools and the introduction therein of trained nurses; in the inspection of factories; in cleaner streets; in better conditions in every way where men live and work.

The feature which has in some ways not kept pace with the others is one to which we shall now give some little consideration—the one which, in my opinion, far surpasses in importance all others singly or in combination—namely, the home. Look into a modern manual of hygiene, and you will find among the first subjects brought forward for consideration the so-called predisposing causes of disease. When looked into closely it will be found that the matters of which they treat, and in a most exhaustive fashion, are the individual and his environment. You will find that individual studied from a variety of stand-points—those of age, race, sex, occupation, heredity, and others. You will learn that certain diseases are common among some races and markedly uncommon in others. The freedom of the Jewish people from epidemics may be quoted as an instance. You will see that age predisposes to some diseases, that others belong to childhood and youth, and that certain diseases are found among people of all ages. You will also discover that women generally live longer than men. In a general way you will find out that some occupations, either in themselves or in the conditions under which they are performed, are detrimental to good health—the former, for instance, including any of those in which a good deal of dust

must be inhaled, the latter being those carried on in uncleanly, crowded, ill-ventilated workshops, which render a work not injurious in itself the cause of reduced vitality. You will come to the question of heredity, and will learn that few diseases are really inherited, yet that heredity is a strong factor among the causes of disease, and will recognize the truth of this in remembering the diseases that have appeared in successive generations of families whom you have known in much the same way that qualities of mind or certain moral infirmities have reappeared. You will hear of good heredity and bad heredity, and realize that the individual and his relations to disease are complicated matters, and in his ability to struggle successfully against it his hereditary tendencies must count. How greatly they count must be the result almost entirely of his "environment," and his environment for all practical purposes is the home in which his early training and education is received, in which hereditary tendencies that are bad may be corrected, modified, and more or less controlled. "Health in the home," said a high medical authority a few years ago, "is health everywhere; elsewhere it has no abiding place." "The real future progress of the sanitary movement rests upon the women of the country," he adds. "How vital, then, that they should have a thorough knowledge of sanitary matters." We are thus brought by slow degrees to realize, possibly for the first time, how great are our responsibilities, how great our opportunities. We women, the world over, are the guardians and makers of the homes, and shape largely the lives of all who surround us. Briefly outlined, what knowledge should we have to govern our homes aright? It is easy to answer. There is nothing concerning our homes so trivial that it may be safely left to chance. In some of its aspects—in the situation, for instance—arbitrary conditions often must govern, such as convenience of schools, convenience for the business purposes of the head of the household, cost of rentals, etc.; but if the choice is given you, the suburbs or adjoining country, where the air is free from smoke and dust, will provide you with one of the first essentials of health. The house you choose should, as you know, be on a dry soil and catch every ray of light and sunshine that can possibly be secured. Dark rooms, shaded rooms, north rooms, into which no sunshine and little light enter, are distinctly unhealthful and will depress both mental and vital activity. They may not actually cause a known disease, but they do assist in that general breaking down of health which leaves one defenceless against attacks. Women and children suffer most from dark houses, since men are out and about the greater part of the daytime. If you want a fair idea of what darkness can do, place a good, healthy, growing plant in your cellar, and watch it bleach out and become white and lifeless. If you are still

doubtful, turn to any of the authorities on hygiene. "Rooms are healthy in direct proportion to the amount of light and sunshine they admit." "A large proportion of certain kinds of bacteria are killed by the direct rays of the sun." "In laboratory experiments this is very striking, many kinds being destroyed in from one to two hours in the presence of sunlight and air," says one of our first authorities on hygiene. Many years ago a well-known scientist called attention to the influence of sunlight upon cholera, showing that the mortality on the shaded side of narrow streets was higher than on the sunny side. To my mind a most powerful argument in favor of light is that it encourages cleanliness. It shows up pitilessly dust and other materials in themselves inimical to good health, but often concealed in the dim religious light which for many years custom has sanctioned in some parts of our households. I dwell upon this because so frequently I have visited three or four houses in the course of an afternoon where I have stumbled at the threshold into a room from which all but a few rays of light were carefully excluded by the window trappings. The question of heating and ventilation follows naturally that of light, and is so important a matter that one could well consume the entire time upon this subject only. It is generally conceded that most houses in this country are kept entirely too warm, just as most houses in other countries are uncomfortably cold. The one advantage of the latter is that from very discomfort people are driven out-of-doors. It seems to me an important point in the preservation of health that there shall be an equable temperature in the various rooms of the house, drawing-room, dining-room, and bedrooms, and that there shall be no sharp variations which leave one shivering in one room and perspiring in another. A mean temperature of 65° to 66° F. in most climates is suitable for the average healthy individual. For infants, aged, and feeble people it should be kept at 70° F. You all know that the radiation of the open fire is one of the healthiest, as well as pleasantest, forms of heat. It is also one of the most extravagant. We have no time for discussion of the comparative merits of other methods of heating, but they form an important feature of a healthy household and should be carefully studied. Of ventilation or fresh air there can be no question of our need. We must have it, and plenty of it. Every hour each of us spoils for further use in breathing as much air as would be contained in a room sixteen feet long, twelve feet broad, and ten feet high. This is about what is meant by two thousand cubic feet per hour. Unless we can somehow secure this amount of fresh air we shall suffer sooner or later. In those rooms where there is no system of ventilation there should be constant attention to this matter. "Windows were made to open, doors to shut," says

Florence Nightingale in her inimitable "Notes on Nursing." Windows should be opened frequently and rooms flooded or flushed with fresh air, or there should be some of those many simple home contrivances used to bring in a constant gentle flow without draught. The windows should always be open at night, the only points to remember being the importance of keeping out of draughts. Air is quite as pure at night as in the day—I sometimes think purer in cities, owing to the fact that the cessation of traffic causes less dust. At its worst it is healthier to have the air from outside than the used-up air from the rest of the house coming in through a door or transom. "All these things," you will tell me, "have I known from my youth up," yet I may say that it is our common experience to find people who have always, when possible, slept with closed windows. They are sometimes to be found wandering in search of health about hospitals and sanitaria.

The *very first* condition of health is cleanliness, and our houses are healthy and wholesome or not in just such measure as we appreciate and live up to this fact. "Cleanliness," says Dr. Richardson, "covers the whole field of sanitary labor; it is the beginning and the end." By long and sad experience of the race we have come to understand what cleanliness really is, and to recognize any uncleanliness, dust, dirt, refuse, not only as unpleasant, but as dangerous to health. The very best safeguard we know how to apply against disease, and particularly the infectious diseases, is scrupulous cleanliness of person, of food and of raiment, of milk supply, of water supply, and of everything within our gates. Few things in history are more striking than the control of disease which has been effected by this measure alone. We are bringing into our households many features which make it easier to maintain a higher degree of cleanliness, notably our hard-wood polished floors, so easy to clean, so healthful, in that they harbor no dust; in our use of tiles and painted or varnished walls, surfaces so readily cleansed; in our gradual emancipation from heavy hangings, which harbor dust; yet when we see our sisters with long dresses gathering up the unspeakable filth of the street, and know that much of that uncleanness goes straightway into their wardrobes to be hung up in darkness, we realize that there is still room for fuller appreciation of the word. A glimpse into the kitchens and pantries and refrigerators of some extremely respectable households has only served to emphasize this view. Cleanliness in the care of food supplies and in the washing of food utensils should be as nearly perfect as we know how to make it, yet I am not clear whether *our* standards or those of our ignorant cooks and indifferent maids prevail. Indeed, the care of food materials for our household is one of paramount importance and should receive the closest attention. This

is true at all times, and doubly true when any epidemics are about. It will not be new to you that in the scrupulous cleanliness which fails to attract flies, as well as in the screens which exclude them, we may be doing what we can to prevent typhoid fever. To prevent this, also, we will boil and filter the drinking water, investigate closely our milk supply, and quite as closely our ice supply.

The agency of flies in carrying disease has of recent years become fairly well known, and window-screens now may be regarded as a necessity in a healthy household. Their use is twofold, in that they exclude mosquitoes as well as flies, and, together with nets, serve as a simple measure for the prevention of malaria.

The utility of vaccination in preventing smallpox, and the attitude of a certain portion of the human race towards it, forms one of the most interesting and remarkable chapters in the history of mankind. In all the long warfare with disease this is the most powerful measure of prevention that has ever been discovered. Smallpox is one of the most contagious of all diseases, and one of the most to be dreaded. It is an old disease. It appeared in the sixth century, and probably earlier, and continued on through the centuries until it grew to such dimensions that a Continental writer in 1546 says, "Everybody has smallpox sooner or later." It is still with us, and positively the *only* thing we *can* do to prevent it is vaccination. Of the efficacy of this measure overwhelmingly convincing evidence surrounds us on every hand. In those places where it is carried out to its fullest extent smallpox is practically extinguished. The measure has a peculiar interest for women in that the inoculation which led to it came early in the eighteenth century to the western civilizations through the keenly observing and intrepid Lady Mary Montagu.

We have everywhere among us to-day an evil almost as terrible and far more widely prevalent than the awful pestilences of other days. Tuberculosis is always with us, and everywhere among us. Few of us have not lost through it someone dear to us. In this country one may say that one hundred and fifty thousand people die annually of some form of tuberculosis, while throughout Europe the annual death-roll is estimated at one million. In New York alone, said Dr. Herman Biggs, about nine thousand new cases occur annually. No epidemic of the past exceeded in importance and magnitude the tuberculous diseases to-day, but where our forefathers groped blindly in ignorance, we are armed with a full knowledge of its causes and of methods by which it may be controlled or prevented. "In its most important aspects," says Dr. Osler, "the problem of tuberculosis is a home problem," and its "battlefield is not in hospitals nor in sanitoria, but in homes where it is born

and bred." "Ninety-eight per cent. of the patients who have it must be treated in their homes." I know few things more striking than the measures dictated by modern science for this purpose. Hear them! Abundant fresh air and sunshine daily and fresh air at night, nourishing food in abundance,—milk, eggs, meat, etc.,—rest, and courage. This is all. With tuberculosis everywhere about, there are few of us, probably, who have not come in contact with it, and few who have not been in some small way infected by it. Why we do not all die of it is because, through a good inheritance or through well-ordered lives, we are placed in favorable conditions to resist it. The very points which we have considered so carefully in our houses—light, air, *sunshine,* for it destroys germs; cleanliness, for dust carries them; and of everything: of food, for flies and dust infect it; of drink, for much of the water is already infected; of raiment and surroundings—are here seen to be *vital* to healthy life. Even this most dreadful of diseases makes little headway when it attacks an individual fortified by a wholesome environment, and the whole treatment of it, when present, is, we perceive, almost confined simply to an excess of the same measures. As I said before, this paper is not to suggest details of treatment or care, which are the province of the physician only, but to consider in the widest possible sense where the home stands in its relation to the manifold maladies of the day. Now, we may be spotlessly clean in every detail of life, ourselves and our homes may be irreproachable, hygiene and sanitation may triumph in every particular, yet our efforts to keep our households free from the invasion of disease may be marked by many conspicuous failures. In the transition from the older days, when the industries of the household were carried on there under the watchful eye of the mistress, to the more complicated urban life of the day, we have reached a stage where very many of these industries are taken out and carried on elsewhere. Under what conditions these are maintained of some instances we know something, of the majority we are astonishingly ignorant. How many of those, for instance, who have private laundresses know anything of the households in which that work is done; yet nothing could touch our persons much more closely. If we purchase food supplies, bread, pastry, ice-cream, have we ever thought it worth while or any part of our duty to know that they are made under sanitary conditions or even with a moderate degree of cleanliness?

The work of that very valuable society, the Consumers' League, shows only too plainly for the peace of mind of many of us the truly horrible conditions under which many of the garments which we wear are made. The story of the sweat-shops is another hard page in the history of man's inhumanity to man. The chain of health is no stronger than its weakest

link, and if our preventive measures begin and end with our own homes, if we do not help to carry them into the homes of others,—ignorant, because they have no way of learning what we know; helpless, because of the relentless oppression of poverty,—we can only compare ourselves to the one of old who proclaimed that he fasted twice in the day, yet did not go down to his house justified. He was of those who bind burdens grievous to bear upon the shoulders of others. The voices of all those who work in the midst of our poorer brothers proclaim that their ignorance and poverty make their homes and surroundings a menace to the community, a channel through which runs a never-ending stream of possible infection into the households of the well-to-do. The district nurse in her visits may find the small child sick with scarlet fever carefully covered with the garment in the process of making, which may later find itself on the person and conveying the disease to the healthiest child we know. She will discover typhoid fever in many houses where not one single precaution is taken or known which will prevent scattering broadcast the seeds of disease. She will find women with tuberculosis working at many industries which affect us in our homes—the making of children's dresses, for instance, at thirty-five cents a dozen, a fair average price for some kinds of work. The reports of the Consumers' League tell us definitely of finding smallpox in tenement-houses where clothing was being made—and tenements are the *homes* of the poor. It may be beyond our power to go to any large extent directly and deeply into this question of the housing of the poor, and their lives and occupations and troubles, but it is nevertheless somewhat our concern. We can always by our financial and moral support give authority and power which will sustain other workers in their efforts here. Those workers willing to give time, thought, and energy to various forms of social work and reform should be helped and multiplied in every possible way. We need more settlements, more neighborhood workers, and many more members of that useful body of trained women to which I have the honor to belong placed on our forces of district nurses, either as special or general workers. Nor should our interest stop here; the cleanliness of the streets, the disposal of refuse, the condition of the schools and their medical inspection are distinctly our affairs. Call these matters public hygiene if you will, they are in a sense tributary to the home and cannot be separated from it; and again the eternal and complete interdependence of individual and environment is seen. You will note that I have left entirely out of the question, so far, any detailed reference to the upbringing of children, but that is not because I have not a few things to say. Probably in no matters relating to health have there been greater advances of late years than in

knowledge of how to bring up infants and children. The question of infant feeding alone has a large literature and occupies the entire time and thought of many of our best scientific workers. It has resulted in a marked reduction in infant mortality. There is scarcely a feature of child life, and especially of child education, which is not receiving the attention of the best minds of the country. In many ways this is eminently desirable, and the results can be nothing but good. In others there is a tendency so obvious, so common, and marked by such a degree of danger that I would ill fulfil my duty in neglecting it. Plainly speaking, this tendency is to assist in the development of what may be called nerves in the nursery. The child who is, and knows that he is, at once the centre and circumference of the family circle, whose every sensation and emotion and act is an event to be dwelt and enlarged upon, is in a pretty sure way later on in life to be caught in some form of nervous disorder. Anything which magnifies a child's importance in the family is tolerably sure to set him at odds later with the facts of life. The parents who make a habit of sacrificing themselves to their children are really deliberately training them in habits of selfishness, habits which the same process will bring about even in adults. The Jesuits always say, give me a child in the first few years of his life, and I don't care who has him afterwards. In this day of many pleasures into which children are led, of duties into which they are pushed, it becomes doubly necessary to stop and consider "Man in the making."

There is but one way by which a child can be truly rendered strong, ready, able, and unafraid for the battle of life before him, and that is by a steadier, wiser discipline than is now generally exercised. The child who can stand a little disappointment, who may perhaps be reproved occasionally without a childish attack of something closely resembling hysteria, the one who obeys without teasing, dawdling, or whimpering, is fortifying himself somewhat against future failure, future loss of grip on life. If some youngster nowadays does not seem interested in his studies or inclined to do anything which may be called work, the chances are that after a time we will in all likelihood take him out of school and consult a nerve specialist, instead of calling his trouble good old-fashioned idleness and administering the old-fashioned, much-neglected spanking. Follow such children on through the years, and unless some wholesome, gently hardening measures and influences can be brought to bear, one may be tolerably certain of finding them wandering about from hospital to sanitarium, suffering from some one of the varieties of nerve disorders. For every ache or ailment, no matter how caused or how trivial, they have hurried promptly for some panacea. Patent medicines of all sorts, the sedatives especially, have

been commonly resorted to. It takes all the effort that their professional brothers and sisters know how to muster to so encompass their lives for a time as to bring them back to even moderate health, and often this cannot be done. But probably it might have been prevented, and by simple means.

In summing the matter up, it seems as if life and health were given us as a trust, and we cannot but be answerable for their proper use: answerable to our families, if by any known available means we can prevent ourselves from becoming either useless or burdensome; answerable to society, if through any neglect or indifference of ours we fail to take our share in the work of life about us. It is a distinct injury to society when we cease to do our own work, and we become still more injurious when, for any reason, we cause others to care for us.

PNEUMONIA

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THE NURSING OF PNEUMONIA.

Hygienic surroundings are of the greatest importance in the nursing of pneumonia. The room, the bed, the person, and the clothing of the patient cannot be too carefully considered. When it is possible, have a room with a fireplace and a southern exposure. Fresh air and sunshine are vital necessities. In no other disease is oxygen a more life-sustaining quantity. Remove all the curtains, pictures, unnecessary furniture, and bric-a-brac: pneumonia is a febrile disease and "patterned things" are a serious annoyance and detriment to the patient.

Provide two screens, one to obstruct the draught from the window and the other the draught from the door. It may be necessary to provide a double screen for the window, or to throw a cotton sheet or cotton spread over the single screen to prevent the air blowing directly upon the patient should the wind be strong enough to go through the single screen.

In the *lobar* or *frank pneumonia* admit the air freely to avoid pleuritic complications by guarding against a chill. In lobar pneumonia keep the temperature of the room at sixty-five to sixty-eight degrees.